

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions of claims in the application.

Claims 1-23 (Canceled)

Claim 24 (Previously presented): An electrolytic apparatus for producing an electrically conductive nano-wire comprising:

- a substrate, a gate electrode formed on the substrate, an insulating layer covering the gate electrode, two facing electrodes formed on the insulating layer;

- an electrolytic cell for holding the electrolyte and the substrate; and

- a voltage control device connected to the gate electrode and two electrodes for controlling the voltages applied across the gate electrode and two electrodes; wherein

- the electrolytic cell includes:

- an electrolyte holder section for holding the electrolyte, and

- a substrate plug section for plugging the substrate;

- the site of the substrate plug section exposing the substrate when the substrate is plugged in the substrate plug section is covered with an insulator;

- the two electrodes have respective protrusions located either between both ends of each electrode and extending toward the other electrode, or on one end of each electrode and extending toward the other electrode by bending the each electrode at the one end;

- each end of the protrusions of the two facing electrodes faces each other in parallel, or is tapered as approaching the other protrusion;

- the two electrodes have an insulated portion covered with an insulator;

- the gap between the closest sites of the two electrodes formed on the substrate is from 1 nm to 100 μm ;

Response After Final
Application No. 10/506,668
Attorney Docket No. 042664

the electrically conductive nano-wire is produced between the two electrodes or above the two electrodes, by allowing the electrolytic cell to hold an electrolyte containing molecules that is to constitute an electrically conductive nano-wire, and generate a gradient of voltage between the two electrodes by applying a voltage across the two electrodes in the state wherein the electrolyte and the two electrodes are in contact.

Claims 25-41 (Canceled)